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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Peter Stephen Cross

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11/16/2011

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EXAMINER

HIKSON, CHRISTOPHER

ART UNIT

PAPER NUMBER

1777

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/592,965	<b>Applicant(s)</b> CROSS ET AL.	
	<b>Examiner</b> Christopher A. Hixson	<b>Art Unit</b> 1777	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 5) ☒ Claim(s) 1-3, 6-53 and 58 is/are pending in the application.
- 5a) Of the above claim(s) 9-13, 15-27, 29, 39, 40, 42 and 45-53 is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-3, 6-8, 14, 28, 30-38, 41, 43, 44 and 58 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. The amendment dated 9 September 2011 is acknowledged. Claims 1-3, 6-53, and 58 are pending. Claims 58 is newly added. Claims 4, 5, and 54-57 are cancelled. Claims 9-13, 15-27, 29, 39, 40, 42, and 45-53 are withdrawn. Claims 1-3, 6-8, 14, 28, 30-38, 41, 43, 44, and 58 are considered on the merits below.

### ***Response to Amendment***

2. In response to the applicant's amendment, the grounds of rejection are modified.

### ***Priority***

3. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in New Zealand on 25 March 2004. It is noted, however, that applicant has not filed a certified copy of the present application as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-3, 6-8, 14, 31, and 41** are rejected under 35 U.S.C. 102(b) as being anticipated by Woolford et al. (US 5 052 341)(Woolford).

Regarding claim 1, Woolford discloses a sampler which has a collection recess adapted to separate substantially single-phase fluid from a multi-phase fluid (Fig. 1, chamber 12, col. 3, lines 55-65), and an extraction outlet in the collection recess (pipe 18). The samplers also

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includes a fluid sensor system capable of sensing the presence of a minimum volume of the fluid in the collection recess (electrodes 17 and 18, col. 4, lines 25-57) and a fluid controller capable of controlling the flow from the collection recess via the extraction outlet (valve 23, col. 4, lines 52-68). The controller is characterized in that a sample volume of the fluid is obtainable by operating the controller to allow the sample volume to flow through the extraction outlet after the fluid sensor has detected the presence of the minimum volume of the fluid in the collection recess (col. 4, lines 52-68 and col. 3, lines 1-20). The sampler's sensor is configured as a fluid level detector (col. 4, lines 39-51) and sensor is positioned to detect the presence of single-phase fluid at a position in the collection recess indicative of sufficient single-phase fluid volume to extract the defined volume sample (col. 4, lines 39-51, col. 3, lines 1-18, where the defined volume sample is the volume of sample above the "predetermined volume" - defined volume sample *can* mean a sample whose volume is precisely known by the operator, but is not limited to that, the volume of the sample is clearly defined here as that volume of fluid above the predetermined limit that enters the chamber during the extraction procedure).

Regarding claim 2, the sampler also has a pump controlled by the controller to extract a sample volume from the recess (col. 7, lines 60-68, where pump is controlled by manipulation of valves).

Regarding claim 3, the sampler also has a valve controlled by the controller to extract a sample volume from the recess (col. 7, lines 60-68).

Regarding claim 6, the sample includes additional fluid level detectors to provide data on fluid level change and/or rate of fluid level change (three-electrode arrangement in Fig. 2, col. 5, lines 18-40).

Regarding claim 7, the fluid sensor is capable of continuously measuring the absolute single-phase fluid level within the collection recess (col. 6, lines 59-63).

Regarding claim 8, the fluid sensor is configurable to detect the absence of fluid or gas at a predetermined level in the collection recess (col. 4, lines 39-51).

Regarding claim 14, a predetermined or minimum sample volume of the fluid is obtainable by operating the fluid controller to allow fluid to flow through the extraction outlet for a predetermined period after the sensor system has detected the presence of a predetermined minimum volume of fluid in the recess (col. 7, line 49 - col. 8, line 15).

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Regarding claim 31, the entrance to the collection recess from the fluid flow system is raised from the lowermost position of fluid flow in the fluid flow system (Fig. 1, nipples 13 are above the lowermost position of fluid flow in the system, since they are above the bottom of the recess).

Regarding claim 41, the extraction of the sample volume is delayed for a predetermined time period after commencement of fluid flow (col. 4, lines 58-68).

6. **Claims 1-3, 6-8, 14, 28, 30, 34-37, 43, and 44** are rejected under 35 U.S.C. 102(a) and (e) as being anticipated by Johannesson et al. (US 2004/0194712)(Johannesson).

Regarding claim 1, Johannesson discloses a sampler which has a collection recess adapted to separate substantially single-phase fluid from a multi-phase fluid (Fig. 1, sample reservoir 115), and an extraction outlet in the collection recess (pipe attached to outlet valve 119). The samplers also includes a fluid sensor system capable of sensing the presence of a minimum volume of the fluid in the collection recess ([0116]) and a fluid controller capable of controlling the flow from the collection recess via the extraction outlet ([0116]). The controller is characterized in that a sample volume of the fluid is obtainable by operating the controller to allow the sample volume to flow through the extraction outlet after the fluid sensor has detected the presence of the minimum volume of the fluid in the collection recess ([0116]). The sampler's sensor is configured as a fluid level detector ([0116]) and sensor is positioned to detect the presence of single-phase fluid at a position in the collection recess indicative of sufficient single-phase fluid volume to extract the defined volume sample ([0116], the samples have a defined volume, [0107], since air bubble detected indicates end of sample - volume defined by end bubble).

Regarding claim 2, the sampler also has a pump controlled by the controller to extract a sample volume from the recess ([0031], since valves control pump).

Regarding claim 3, the sampler also has a valve controlled by the controller to extract a sample volume from the recess (valve 119).

Regarding claim 6, the sample includes additional fluid level detectors to provide data on fluid level change and/or rate of fluid level change ([0058]-[0062]).

Regarding claim 7, the fluid sensor is capable of continuously measuring the absolute single-phase fluid level within the collection recess ([0116]).

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Regarding claim 8, the fluid sensor is configurable to detect the absence of fluid or gas at a predetermined level in the collection recess ([0116]).

Regarding claim 14, a predetermined or minimum sample volume of the fluid is obtainable by operating the fluid controller to allow fluid to flow through the extraction outlet for a predetermined period after the sensor system has detected the presence of a predetermined minimum volume of fluid in the recess ([0116]).

Regarding claims 28, 43, and 44, upon detection by the fluid sensor of the absence of the fluid, the fluid controller may activate the pump or valve to allow the passage of non-dissolved gas to form a bubble between fluid samples ([0052], [0053], [0058]).

Regarding claim 30, the detection of the fluid sensor system of the absence of the fluid in the collection recess instigates an evacuation of the recess and outlet by pumping gas or fluid through the sampler fluid paths ([0052], [0053], [0058]).

Regarding claims 34-37, the sample volumes are retained in fluid conduits, acting as storage vessels, which include a fluid sensor ([0058], first sensor).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. **Claims 32 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Woolford.

Woolford does not specifically disclose the limitations of claims 32 or 33.

However, such choices reflect obvious engineering design. The mere rearrangement of parts, without any new or unexpected results, is within the ambit of a person of ordinary skill in the art. See *In re Japikse*, 86 USPQ 70 (CCPA 1950) (see MPEP § 2144.04).

11. **Claim 38** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johannesson in view of Sandholm (US 4 659 656)(Sandholm).

Regarding claim 38, Johannesson discloses that the sample processor is for mastitis detection ([0065]) however, he does not further describe its structure.

Sandholm describes that a sample of milk is mixed with a reagent (Fig. 3 and associated text). Accordingly, in an automated instrument, such would include an inlet for the milk, a mixing chamber with a reagent inlet, and an outlet so that the experiment could be repeated.

It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Johannesson's apparatus to include the sample processor consistent with Sandholm's procedure in order to perform his method in an automated device.

12. **Claim 58** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johannesson in view of Woodside (US 4 994 682)(Woodside).

Regarding claim 58, Johannesson teaches that bubbles should be detected as well as the milk level ([0058]).

However, he does not detect them using the structure defined by the claim.

Woodside describes an instrument which can measure the level of one fluid lying above another, where the fluids have different indices of refraction (abstract, Fig. 4 and associated text,

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col. 4, lines 35-45). This device has a total internal reflection sensor having an emitter and detector (Fig. 4, source A, light guide connected to A, and detector 1; col. 5, line 40 - col. 6, line 20) and a transmission sensor having an emitter and detector arranged on opposing sides (Fig. 4, source B, and light guide connected to B, and detector 1). Having one configured to detect air-froth interface and another configured to detect froth-milk interface would allow all levels to be known.

It would have been obvious to one of ordinary skill in the art at the time of invention to have substituted Woodside's level detection device, since he teaches a suitable method of detecting the levels and Johannesson simply indicates that such is required without explicitly description of the method he preferred.

### ***Response to Arguments***

13. Applicant's arguments filed 9 September 2011 have been fully considered but they are not persuasive.

The applicants argue that the "defined volume sample" limitation has not been met. This is not persuasive for the reasons better described in the rejections above regarding the examiner's interpretation of the phrase "define volume sample."

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Hixson whose telephone number is (571)270-5027. The examiner can normally be reached on M-F 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on (571)272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/15/2011

/Yelena G. Gakh, Ph.D./  
Primary Examiner, Art Unit 1777

/Christopher A. Hixson/  
Examiner, Art Unit 1777